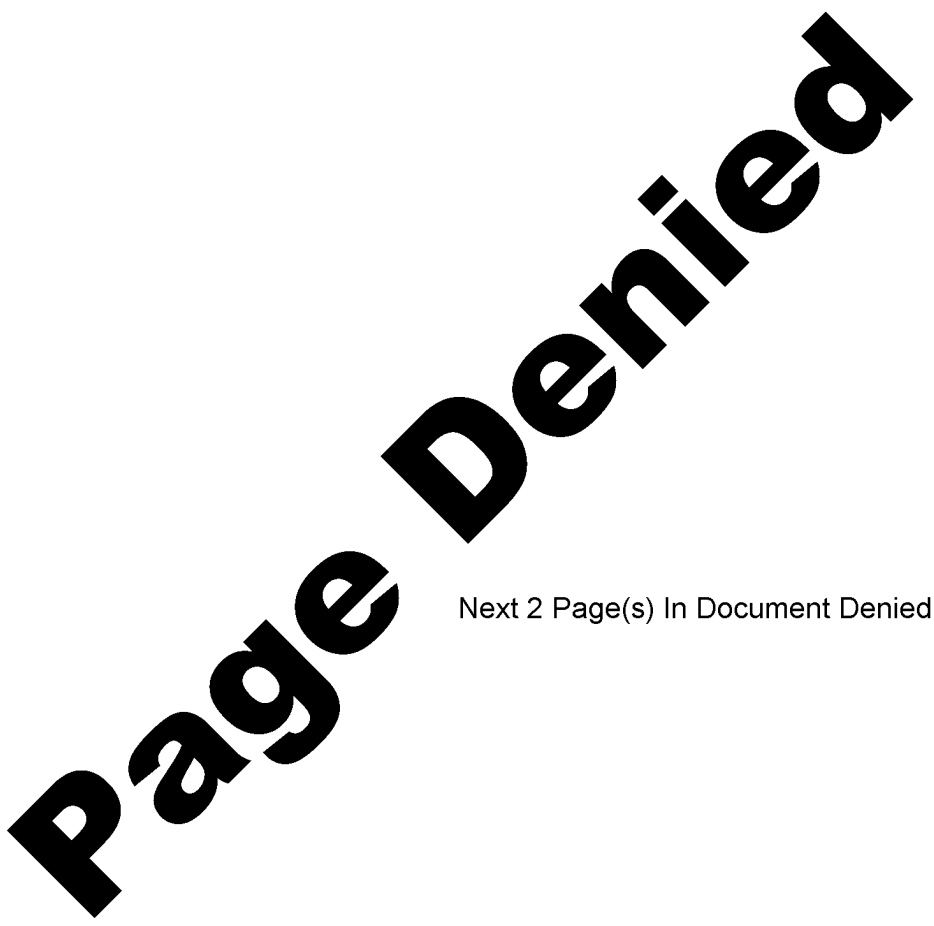

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MILITARY THOUGHT (USSR): Missile Technical Support in a Front Offensive Operation Beginning Without the Employment of Nuclear Weapons

Missile Technical Support in a Front Offensive Operation Beginning Without the Employment of Nuclear Weapons

by

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The complexity of organizing missile technical support of troops in an offensive operation beginning without the employment of nuclear weapons is due on the one hand to the fact that the purpose of this support is to maintain rocket troops in constant readiness to deliver a massed strike in the event of a transition to nuclear operations, and on the other hand to the necessity for supplying the troops with conventionally (or chemically) armed missiles which can be employed to carry out certain tasks.

This duality of the task to be carried out correspondingly determines the principles for organizing missile technical support of a front (army), and it is to an examination of these principles that the present article is devoted.

Certain organizational and technical measures have been carried out recently within the ground forces which have led to further improvement of the whole system of missile technical support, have made it possible to increase the productive capabilities of missile technical units and subunits, and have effected some improvement in the operating characteristics of the missile systems which are already in service.

Many processes are being automated, and the assembly line method of preparing missiles is being introduced. In addition, the allowable distances and speeds for transporting missiles by railroad or by dirt or surfaced roads have been increased, as have the time limits for storing missile equipment and for performing periodic technical servicing of it.

All of this will enable us to reduce by more than half the time for bringing rocket troops to full combat readiness.

The establishment of a whole series of specialized missile technical units, and changes within the control structure of the missile and artillery armament service of a front (army), have in turn expanded the capabilities and improved the conditions for supplying troops with missiles.

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At the present time the provision of missiles to the troops is organized and implemented by the staff of the front, based on the decision of the troop commander, who determines the allocation of missiles in accord with the tasks of the operation and the available troops (armies); he also establishes the missile reserve and the stockpiling norms. At the same time, the front staff plans the moving out and deployment of missile technical units; allocates forces and means for engineer preparation, camouflage, air defense, and the guarding of their locations; organizes the control of missile technical units; determines the procedure and timing for relocating them during an operation; designates the routes for transporting missiles and bringing up missile propellant; and monitors the progress of providing the front troops with missiles.

The directorate of missile and artillery armament of a front handles the more detailed planning for providing the troops with missiles, organizes the deployment of missile technical units, depots, and repair organs and their relocation during an operation, and monitors the preparation of missiles and their delivery to the troops, as well as the receipt and transport of missiles delivered from the center. The supplying of the troops with missile propellant and the transport of missiles from rear bases and arsenals are organized by the rear staff of the front.

The preparation and delivery to the troops of missiles allocated to a front, as is well known, are handled by missile technical units.

The missile technical units are situated on the main axes of troop actions (dispersed along the front and echeloned in depth), taking into account the road network, the terrain conditions, and the capabilities for organizing stable communications. The areas in which these units are located must provide for dispersed and concealed positioning of equipment (while maintaining the established flow of equipment), for maneuvering within positions, and for rapid packing up and moving out onto the movement routes. Also, alternate areas for missile technical units must be designated and prepared in all instances.

First of all, the missile technical units of a front and armies prepare the reserve of missiles needed for the conduct of an initial massed strike.

A rough calculation of the number of missiles needed to establish a mobile reserve for the conduct of an initial massed strike by a front is set forth in the table.

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It can be seen from the table that for a front of the given composition, about 254 to 272 missiles (168 to 180 nuclear and 86 to 92 chemical) will have to be prepared and delivered to the missile large units and units of the front in order to establish a mobile reserve of missiles for carrying out an initial massed strike.

Under the existing peacetime procedure for echeloning reserves of missile delivery vehicles, warheads, and missile propellant, and the current table of organization and technological capabilities of front and army missile technical units -- and if missile technical subunits of missile large units and units are detailed for the testing of missile delivery vehicles, the fueling of missiles, and the mating of missile delivery vehicles with warheads -- then the amount of time required to prepare and deliver the proper number of missiles will be: up to 24 hours for operational-tactical missiles (except for cruise missiles, which require 48 to 60 hours to prepare and deliver), and up to 18 hours for tactical missiles.

Thus the overall time for preparing and delivering mobile reserves of nuclear and chemical missiles (except for cruise missiles) is about 24 hours. This is confirmed by the experience of training exercises.

Accordingly, in carrying out an offensive operation without employing nuclear weapons, it becomes particularly important to determine the time at which action must be initiated to prepare missiles with nuclear and chemical warheads and deliver them to the troops. For front troops it will clearly be most desirable to carry out this work during the period of preparation for an offensive operation. If this is done, the front rocket troops can accomplish a progressive buildup of their level of readiness for the moment the initial massed strike is to be delivered (whenever it may come). As regards the question of delivering prepared missiles to the troops, we cannot rule out the variant in which the order has been given to prepare missiles and warheads with nuclear charges but it is still not authorized (pending special orders) to turn them over to the missile large units and units.

The experience of a series of operational command-staff and research exercises indicates that in preparing an operation in which weapons of mass destruction are not to be employed, a reserve of ready missiles (with nuclear and chemical warheads), providing for fulfilment of the immediate task of the front in case of a transition to actions in which weapons of mass destruction are to be employed, should be maintained within missil 50X1-HUM large units and units. The supply of missiles (with nuclear and chemical

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warheads) designated for carrying out the subsequent task of the front, and the missile reserve, are echeloned within the missile technical units of the armies and the front; in this case some of the missiles are left unprepared.

The most favorable conditions for the uninterrupted provision of missile large units and units with missiles during combat actions will of course occur when the front has missile reserves for an entire offensive operation. However, for objective reasons this is not always possible. The troops of a front may have at their disposal only enough missiles to fulfil their immediate task or to carry out an initial massed strike. As regards the remaining reserves, they obviously must be delivered from the center in such a way that the missile resources for fulfilling the immediate task of the front arrive before the start of the offensive operation, with those for the subsequent task arriving no later than the second or third day after the transition to nuclear actions.

In planning missile technical support of front troops in an offensive operation, we must also provide for organizing the preparation and delivery of conventionally-armed missiles (warheads for operational-tactical missiles), in addition to the preparation of special warheads (in case of a transition to nuclear combat actions). The reason for this is that further improvements in dispersion characteristics and in conventionally-armed missiles (the production of more effective warheads with increased explosive yield and the use of sub-projectile warheads and of warheads charged with incendiary mixtures and having an active-type casing) will increase their capabilities to neutralize various enemy targets. First and foremost this involves tactical missiles, and it is facilitated by the fact that conventionally-armed warheads (as distinct from nuclear warheads) will arrive at the front in ready form.

Problems of the combat employment of conventionally-armed missiles have still not been adequately worked out. There is also a lack of practical experience in planning and organizing their preparation and delivery. However, considering the way in which conventionally-armed missiles may be employed, and their effectiveness against various enemy targets, we can assume that the expenditure of these missiles will be several times greater than that of nuclear and chemical missiles.

Therefore, when conventionally-armed missiles are used in an offensive operation in which nuclear weapons are not employed, it will be necessary to have additional missile technical subunits (units) to prepare them within the front and armies.

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In order to reduce the time required and simplify the preparation of conventionally-armed missiles, it might be advisable, while still at peace, for units and large units of rocket troops to maintain a certain minimum unit of fire. At the same time, the establishment of additional reserves of conventionally-armed missiles (over and above available missiles with special warheads) will certainly require some increase in the means of transporting them.

Calculations show, however, that the transport capabilities of front rocket troops can provide for the simultaneous lifting and transport by large units (units) of the entire reserve of nuclear and chemical missiles for carrying out an initial massed strike (per the attached table) and still have enough transport means remaining to transport about 190 to 210 tactical missiles and 130 operational-tactical missiles, a reserve which can be used to transport conventionally-armed missiles. But for more complete provision of troops with conventionally-armed missiles, and to establish a mobile reserve of specially-armed missiles for carrying out the immediate task (in case of a transition to nuclear actions), a front will have to allocate three to four missile transport battalions and additional transport subunits to deliver missile propellant. In addition, it will be necessary to increase (if only by 1.5 to two times) the quantity of means for transporting missiles to missile large units and units.

Research on questions of echeloning reserves of missiles and warheads (including those with conventional charge) while preparing and conducting an offensive operation in which weapons of mass destruction are not employed, leads to the conclusion that it is advisable to establish mobile depots for missile armament within a front. The purpose of such mobile depots is to maintain and store a reserve of missile delivery vehicles, warheads, missile equipment, ground equipment, and components for missiles and warheads; to repair and store inoperable and damaged launchers, missiles, and warheads; and to collect and evacuate packing materials no longer in use.

Depending on the importance of an operational axis and the composition of the troops, a front may have one or two mobile missile armament depots. Establishing such depots would in turn make it possible to free mobile missile technical bases from repairing inoperable missiles and warheads and evacuating unrestorable missiles and warheads and packing materials no longer in use.

Mobile depots can play an important role in dispersing reserves of ready missiles with nuclear and chemical warheads, which is highly

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essential in a period of non-nuclear actions. For this purpose it would be advisable to deploy branches of the front mobile missile armament depots in the zones of responsibility of the armies.

In organizing the supplying of troops with missiles under the conditions we are considering here, one should take into account the presently existing limitations on the distance they can be transported on tracked launchers (launcher components). We must make a strict calculation of this distance and (in case of need) replace missiles whose transport distance exceeds the allowable. However, the replacement of ready missiles, which have used up the transport resources, is complicated by the absence of all-road trailers, since they will all be taken up by the mobile reserve of missiles. Therefore, the replacement of missiles and their evacuation to mobile missile technical bases for periodic technical servicing and rechecking, can be accomplished only by using additional transport means furnished by the missile technical units. Provision must be made simultaneously for the delivery of ready missiles to replenish the mobile reserve of the unit (large unit).

The transport resources for all of the ready missiles on launcher components in a missile large unit (unit) cannot be allowed to be tied up simultaneously, since this would lead to a sharp decrease in combat readiness.

In planning the relocation of missile units, we must provide for simultaneous replacement of no more than one-third of these missiles by the time the troops reach their previously designated lines.

The following can also be offered as recommendations: first, allow no more than one-third of the missiles, which are dependent on the same transport resources, to be loaded onto launcher components; second, periodically replace the missiles to be transported on launcher components with ready missiles to be transported on all-road trailers. A fundamental solution of the problem, however, would be the implementation of technical measures to increase the allowable transport distance for ready missiles on launcher components (to the full depth of a front offensive operation). Another effective method of resolving this matter is to transport missiles by air. The advantages of this method for delivering missiles to missile large units and units under conditions demanding rapid buildup or replenishment of the mobile missile reserve, are obvious.

First of all, if transport aircraft and helicopters are used, the distance over which missiles can be transported is practically unlimited,

and the time needed to deliver them to the troops is considerably reduced. With this method it is not necessary to prepare transport routes and detail a special guard for shipments; the organization of control and communications is simplified, since it is possible to use the radio means of the helicopter crews; the element of secrecy is ensured to a greater degree; and finally, the maneuvering capabilities of missile reserves are increased substantially. These advantages make transport helicopters a primary means of delivering missiles to missile large units and units when the troops go over to nuclear actions.

For this purpose, the chief of the missile and artillery armament directorate (department) of a front (army) must be allocated the required number of transport helicopters, equipped to transport missiles with airfield-depot and hangar-transport trailers. According to the experience of operational training exercises, three to four squadrons of transport helicopters may be allocated for delivery of missiles during the preparation and conduct of a front operation in which weapons of mass destruction are not employed.

In organizing the delivery of missiles by helicopter, it is necessary to provide for the advance preparation of areas for loading and unloading missiles. Areas 150 by 75 meters should be selected, near the dispositions of missile technical units and missile large units (units), on solid ground, and open in some directions for the take-off and landing of helicopters. For reloading missiles from all-road trailers onto airfield-depot trailers and vice versa, special cranes must be allocated with crews made up from the personnel of the missile technical subunits.

The most complex problems, in organizing the missile technical support of troops in such a way as to maintain them in constant readiness to deliver a massed nuclear strike, are planning and implementing the relocation of missile technical units during an operation.

The underlying principle for this planning must be to maintain a continuous preparation of missiles and deliver them to the troops on a timely basis. A relocation will be planned in detail to the depth of the immediate task of the front.

Depending on the potential rate of advance of the troops, it would be advisable to relocate the mobile missile technical bases, during an operation initiated without the employment of weapons of mass destruction, once every two to three days over a distance of 100 to 120 kilometers. The relocation of separate missile transport battalions may be carried out once

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every three to four days over 120 to 200 kilometers. This will make possible a more rational utilization of missile technical units (for carrying out their respective duties) and will shorten the time needed for rebasing them (allowing for packing up, completing the march into the new area, and deploying there).

Continuously operating communications, set up to control missile technical units, are an important condition, exerting considerable influence on the stability and continuity of missile deliveries to the troops. It is no less important to provide communications means to missile transport crews in order to control them during the delivery of missiles.

In implementing measures for missile technical support of troops, attention must be devoted to matters of concealment. In order to prevent detection of the grouping and location of missile technical units and depots of missile propellant, their deployment areas must be camouflaged with particular care. It is also important to plan measures for camouflaging the communications means which are to be utilized, first of all measures for radio camouflage of the nets controlling missile technical units.

When missiles are being delivered by helicopters, landing pads and areas for loading and unloading missiles must be carefully camouflaged from ground and air observation.

These are, in general outline, the main problems of organizing missile technical support of front troops during the conduct of an offensive operation in which weapons of mass destruction are not employed, problems which certainly require further research and working out.

Calculation of the Mobile Reserve of Missiles for an Initial Massed Strike by a Front

Combat composition of the front	Number of missile large units (units) to be detailed for an initial nuclear strike	Possible number of launchers	Number of missiles to be launched per launcher*	Number of missiles required to establish a mobile reserve for carrying out an initial nuclear strike
Two front missile brigades with operational-tactical missiles and one regiment with cruise missiles	Front missile brigade - 2 Regiment with cruise missiles - 1	Operational-tactical missiles - 18 Operational-tactical missiles - 8	2 nuclear and 1 chemical 1.5 nuclear and 1 chemical	36 nuclear and 18 chemical 12 nuclear and 8 chemical
Two combined-arms armies and one tank army (15-20 divisions)	Army missile brigade - 3, separate missile battalions of first-echelon divisions - 11-13	Operational-tactical missiles - 27 Tactical missiles - 33-39	2 nuclear and 1 chemical 2 nuclear and 1 chemical	54 nuclear and 27 chemical 66-78 nuclear and 33-39 chemical
Total.....	Front missile brigade -2 Regiment with cruise missiles - 1 Army missile brigade - 3 Separate missile battalions - 11-13	Operational-tactical missiles - 53 Tactical missiles - 33-39	-- --	Operational-tactical missiles: 102 nuclear and 53 chemical; Tactical missiles: 66-78 nuclear and 33-39 chemical
				In all..... 168-180 nuclear and 86-92 chemical

* The number of missiles for each launcher assumes two missile launches in a massed strike and takes into account possible losses from enemy means of destruction.